

# Claims

- [c1] 1. An external bilateral telephone interface remote control system, comprising:
- an external remote control host, having an input terminal coupled to a phone line and an output terminal coupled to an external remote control extension that is detachably coupled to at least one wire or wireless switch for forming a remote control network as to control the wire or wireless switch via a phone, wherein the external remote control host comprises:
    - a phone interface processing unit, adapted for processing and receiving phone signals;
    - a memory unit, adapted for storing a preset remote control code;
    - a processing unit, adapted for identifying and processing a control signal from the phone line;
    - a display unit, adapted for displaying a power situation of the external remote control extension; and
    - a RF wireless transceiving unit, adapted for receiving and transmitting correct control signals from the processing unit and a RF wireless transceiving unit of the external remote control extension,
  - the external remote control extension further comprises:

a feed back module, adapted for generating a feedback signal;

a processing unit, adapted for identifying and processing a remote control signal from the RF wireless transceiving unit of the external remote control extension and the feedback signal from the feedback module;

a switch driving module, adapted for turning on or off the wire or wireless switch according to the remote control signal from the processing unit; and

an address encoding unit, adapted for encoding the on or off of the wire or wireless switch, thereby performing the bilateral remote control via the remote control network and the phone line.

[c2] 2. The external bilateral telephone interface remote control system of claim 1, wherein the external remote control host further comprises a power supply and a battery charging and detecting unit disposed between the processing unit and the power supply.

[c3] 3. The external bilateral telephone interface remote control system of claim 1, wherein the external remote control host further comprises a keyboard unit coupled to the processing unit.

[c4] 4. The external bilateral telephone interface remote control system of claim 1, wherein the external remote con-

trol extension further comprises:

a super display, comprising a phone interface processing unit, adapted for receiving and transmitting a phone signal;

a memory, adapted for storing a preset remote control code;

a processing unit, adapted for identifying and processing a remote control signal; and

a display unit, adapted for displaying an operation condition of wire or wireless equipment coupled to the external remote control extension.

[c5] 5. The external bilateral telephone interface remote control system of claim 4, wherein the super display further comprises a power supply and a battery charging and detecting unit disposed between the processing unit and the power supply.

[c6] 6. The external bilateral telephone interface remote control system of claim 4, wherein the super display further comprises a keyboard unit coupled to the processing unit.

[c7] 7. The external bilateral telephone interface remote control system of claim 1, wherein the switch driving module comprises a motor a sensing unit disposed in an equipment and a sensing driving unit coupled to the

sensing unit and the switch driving module.

[c8] 8. The external bilateral telephone interface remote control system of claim 1, wherein the switch driving module comprises:

a switch driving circuit unit;

a motor;

a cam fixed at the axis of the motor;

a spring stick disposed between the cam and a manual switch of a magnetic lock, wherein when the RF wireless transceiving unit receives a remote switching signal from the remote control host, the remote switching signal is transmitted to and processed by the processing unit for generating a control signal, which passes through the switch driving circuit unit to the motor for rotating a proper angle as to push the button of the magnetic lock upward, turn on a circuit of the magnetic lock for unlocking the lock.

[c9] 9. The external bilateral telephone interface remote control system of claim 8, wherein the switch driving module further comprises a manual spring stick over the spring stick, the manual spring stick has two legs for avoiding conflict with the cam, and when the manual spring stick is pushed downward, the lock is unlocked.

[c10] 10. The external bilateral telephone interface remote

control system of claim 1, wherein the switch driving module comprises:

a switch driving circuit unit;

a motor; and

a small gear fixed on the axis of the motor, the small gear gearing with a big gear, which is fixed at a bottom of a spring stick, a lateral enabling stick fixed at the bottom of the spring stick, the lateral enabling stick is movable along a U-trench between a manual gas switch and the big gear.

[c11] 11. The external bilateral telephone interface remote control system of claims 8, wherein the feedback module comprises:

a Hall device, disposed on a side of the remote control extension and coupled to a sensing driving circuit unit; and

a magnet, disposed at a side edge of a door corresponding to the Hall device for determining whether the door is opened by magnetic effect of the sensing driving circuit unit and the Hall device, a signal generated therefrom transmitted to and processed by the processing unit, which is fed back to an original caller through the extension, the RF wireless transceiving unit of the host and the phone interface processing unit.

[c12] 12. The external bilateral telephone interface remote control system of claims 10, wherein the feedback module comprises:

a Hall device, disposed on a side of the remote control extension and coupled to a sensing driving circuit unit; and

a magnet disposed at a side edge of a big gear corresponding to the Hall device for determining whether the gas switch is closed by magnetic effect of the sensing driving circuit unit and the Hall device, a signal generated therefrom transmitted to and processed by the processing unit, which is fed back to an original caller through the extension, the RF wireless transceiving unit of the host and the phone interface processing unit.

[c13] 13. The external bilateral telephone interface remote control system of claim 10, wherein the lateral enabling stick has two symmetric extrusions, which are adapted to sleeve into holes within the big gear in circle for rotating the big gear enabling the lateral enabling stick, as to switch the gas switch, when the spring stick moves upward.

[c14] 14. The external bilateral telephone interface remote control system of claim 1, wherein the switch driving module comprises:  
a switch driving circuit unit,

a motor module;  
a linking rod driven by the motor module; and  
a pin engaged with the linking rod capable of being moved by the linking rod; a metal plate coupled to the pin and a socket; a metal member coupled to a plug; and an optical sensing unit,  
wherein the metal plate and the metal member is able to be connected or separated due to a movement of the pin, so as to connect or disconnect the socket and the plug, and  
wherein the optical sensing unit is able to sense and transmit signals between the external remote control host and the external remote control extension.

- [c15] 15. The external bilateral telephone interface remote control system of claim 1, wherein the switch driving module is a door knob system, and the door knob system comprises  
a door knob with a coupling member;  
a motor module;  
a linking rod driven by the motor module;  
a pushing module with one end coupled to the linking rod and another end coupled to the coupling member of the locker, wherein the linking rod is able to be moved to activate the pushing module to drive the door knob to open or close a door; and

a sensor able to sense and transmit signals between the external remote control host and the external remote control extension.

- [c16] 16. The external bilateral telephone interface remote control system of claim 15, wherein the coupling member of the door knob is a slit formed on the knob, and the pushing module is a pushing rod inserted into the slit to drive the knob.
- [c17] 17. The external bilateral telephone interface remote control system of claim 15, wherein the coupling member of the door knob is a rough cover.
- [c18] 18. The external bilateral telephone interface remote control system of claim 15, wherein the coupling member of the door knob comprises a fixing member and an adhesive member, wherein the fixing member and the adhesive member are sleeved into a neck portion of the door knob, and a slit is formed in the fixing member for receiving the pushing rod.
- [c19] 19. An external bilateral telephone interface remote control system, comprising:  
an external remote control host, having an input terminal coupled to a phone line and an output terminal coupled to an external remote control extension coupled to

a wire or wireless switch for forming a remote control network as to control the wire or wireless switch by a phone, wherein the external remote control host comprises:

a phone transmitting module, adapted for informing a remote super of abnormal data detected by the external remote control extension and the operation thereof through preset phone numbers and voice messages, the remote super inputting control signals via a phone for controlling the wire or wireless equipment;

a memory unit, adapted for storing preset remote control codes, the control signals and feedback signals from a RF wireless transceiving unit of the external remote control extension;

a processing unit, adapted for identifying and processing the control signals from the phone line, a keyboard of the host and the external remote control extension;

a display unit, adapted for displaying abnormal data detected by the sensing unit and the switching driving module of the external remote control extension;

a RF wireless transceiving unit, adapted for receiving and transmitting correct control signals and feedback signals from the processing unit and a RF wireless transceiving unit of the external remote control extension; and

an alarm unit, adapted for sending out alarm signals, the external remote control extension comprises:

a shell;

a sensing unit, adapted for sensing a temperature, a pressure, a concentration, a wind or a PH value;

a switch driving module, adapted for turning on or off the wire or wireless switch;

a feed back module, adapted for generating a feedback signal thereby performing the bilateral remote control via the remote control network and the phone line;

a sensing driving circuit unit, adapted for transmitting said temperature, pressure, concentration, wind or PH value data to a comparing unit;

a setting unit, adapted for setting values for the temperature, the pressure, the concentration, the wind or the PH value;

a comparator unit, adapted for determining whether the temperature, the pressure, the concentration, the wind or the PH value data exceeds the setting values, whether the switch driving module is turned on and whether a feedback signal is transmitted to the host;

a processing unit, adapted for identifying and processing a remote control signal from the RF wireless transceiving unit of the external remote control extension and the feedback signal from the feedback module; and

a switch driving module, adapted for turning on or off the wire or wireless switch.

- [c20] 20. The external bilateral telephone interface remote control system of claim 19, wherein the external remote control host further comprises: a charging unit, adapted for supplying power to the host when an original power supplied thereto is turned off; and a host power supply unit, adapted for supplying powers thereto.
- [c21] 21. The external bilateral telephone interface remote control system of claim 19, wherein the external remote control host further comprises a key-board array unit, adapted for keying indexes and phone numbers.
- [c22] 22. The external bilateral telephone interface remote control system of claim 19, wherein the external remote control extension further comprises a charging unit, adapted for supplying power to the external remote control extension when an original caller supplied thereto is turned off; and an extension power supply unit, adapted for supplying powers thereto.